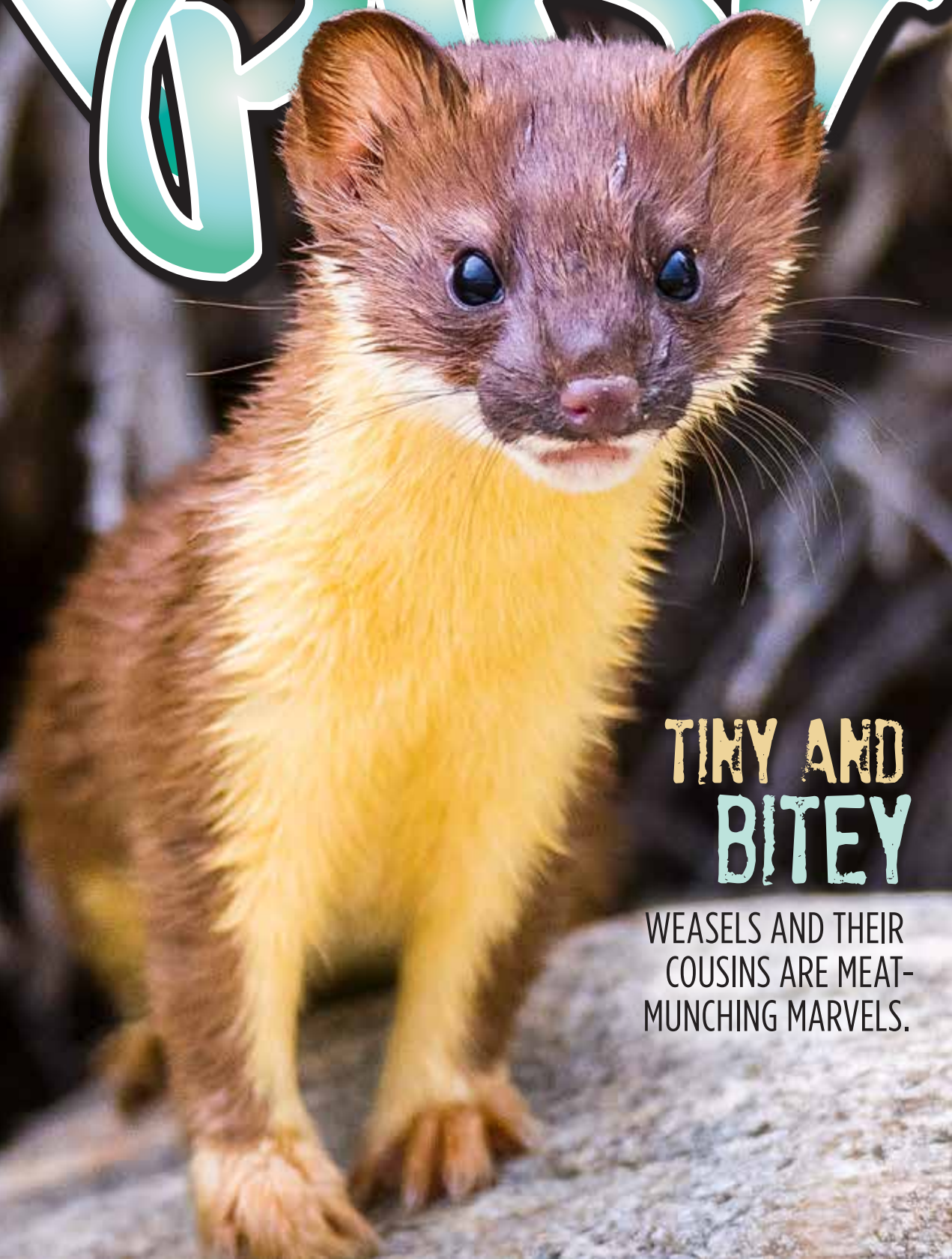




January/February 2018

Explore



TINY AND BITEY

WEASELS AND THEIR
COUSINS ARE MEAT-
MUNCHING MARVELS.

CONTENTS

FEATURES

6 I'm Lichen It!

Learn to spot these cool combo creatures, and you'll be likin' it, too.

10 The Fierce and the Furriest

Welcome to the weasel family, Missouri's largest clan of meat-eating mammals.

DEPARTMENTS

2 Get Out!

3 What Is It?


4 Into the Wild

16 Predator vs. Prey

17 Strange but True

18 How To

20 Xplor More



Flocks rock! American white pelicans get chummy at Eagle Bluffs Conservation Area near Columbia.

by David Stonner



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ON THE COVER

Long-Tailed Weasel

by © Mstrozewski | Dreamstime.com

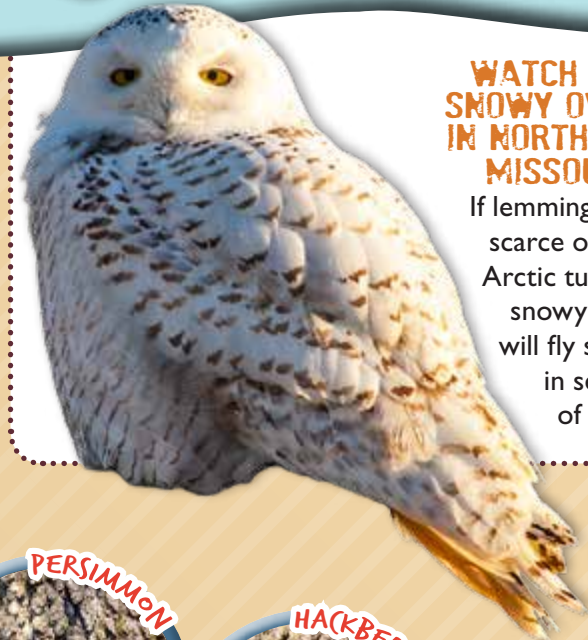
GET OUT!

FUN THINGS TO DO
AND GREAT PLACES
TO DISCOVER NATURE



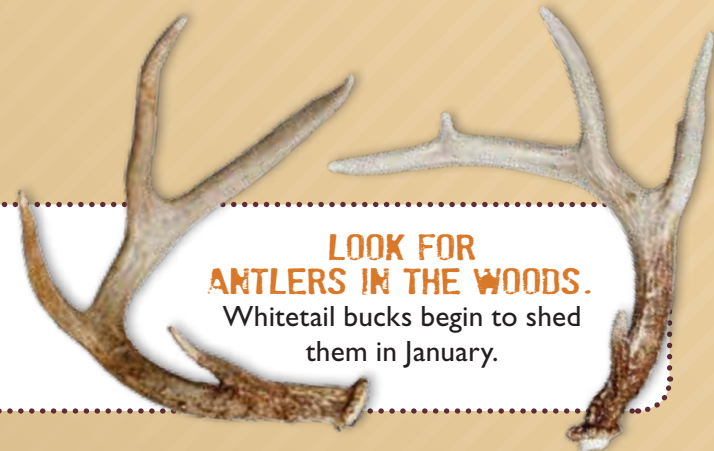
STOP AND SMELL THE OZARK WITCH HAZEL.

It blooms mid-January.



WATCH FOR SNOWY OWLS IN NORTHERN MISSOURI.

If lemmings are scarce on the Arctic tundra, snowy owls will fly south in search of food.



LOOK FOR ANTLERS IN THE WOODS.

Whitetail bucks begin to shed them in January.



PERSIMMON



HACKBERRY



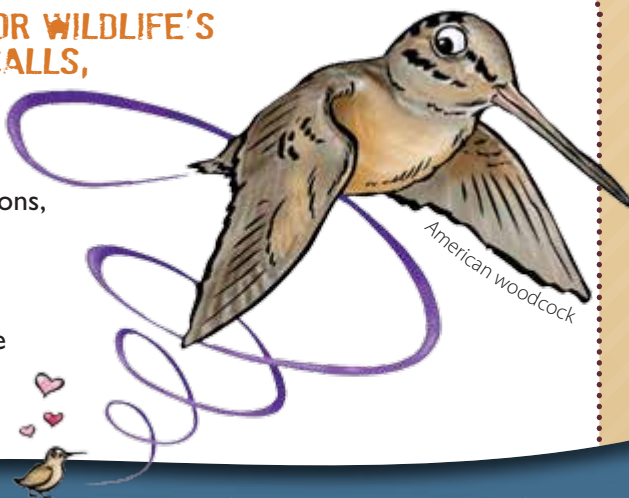
RIVER BIRCH

GET A FEEL FOR WINTER TREE ID.

Persimmon bark is blocky, hackberry bark is bumpy, and river birch bark peels like paper.

LISTEN FOR WILDLIFE'S MATING CALLS,

especially at night. Bobcats, foxes, raccoons, woodcocks, and other critters look for love this time of year.



American woodcock



TRY THE SWEET TASTE OF MAPLE SYRUP.

Lots of Missouri's conservation nature centers offer programs that show you how to make syrup from your own backyard maple trees. Find your local program at mdc.mo.gov/events.

WHAT IS IT?

DON'T KNOW?
Jump to Page 20 to find out.



- ❶ My ancestors came from across the pond.
- ❷ I was spawned in a jar and held in a tank.

- ❸ I'm released into cold-water rivers and lakes.
- ❹ And I'm fun to catch from a boat or the bank.

Into the WILD

snowy backyard

Don't stay inside when the snow gets to blowing. Head out to discover nature coming and going.



Northern mockingbirds typically know between 50 and 200 songs. They mimic other birds with pitch-perfect precision and have been known to imitate barking dogs, croaking frogs, car alarms, and cellphones. The loud-beaked birds start singing in February and don't shut up until November.

What Happened Here?

Your parents probably warned you never to eat yellow snow. Well, don't eat other-colored snow, either.

Cottontail rabbits tinkle pink, red, orange, or brown. The off-colored urine is caused by pigments in plants the rabbit has eaten.



LOOK

Two kinds of tree squirrels scamper through the branches of Missouri. Although they look similar, there's an easy way to tell them apart: Fox squirrels have reddish-brown bellies. Gray squirrels have white bellies.



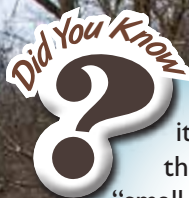
Fox squirrel



Gray squirrel



Place your used Christmas tree under a bird feeder. It will offer birds shelter from the wind and a place to escape to when the neighbor's cat comes prowling.



Although it's no bigger than the "S" in "small," a snow flea can spring 4 inches into the air. If it were human-sized, it could leap over a 20-story building!



In warmer months, **eastern bluebirds** stuff their beaks with caterpillars, beetles, and other insects. But when bugs disappear in winter, bluebirds switch to eating berries.



If you find tiny black specks in the snow at the base of a tree, it probably isn't pepper. Tiny insects called snow fleas become active on sunny winter days. When a snow flea wants to flee, it releases its spring-loaded tail, and the flea flings forward.



White-breasted nuthatches go nuts for nuts. The dart-shaped birds are often seen creeping headfirst down tree trunks. They're named for their habit of cramming nuts into bark and then pecking them open to "hatch" out the seed.



If you find a tangle of tunnels in the grass under the snow, you've found the work of a vole. **Voles** are mouselike rodents with stubby tails. They snip grass to eat and build — mouthful by mouthful — a maze of tunnels.

I'm LICHEN It!

By Bonnie Chasteen

Learn to
spot these
cool combo
creatures,
and you'll be
likin' it, too!

Some types of lichens are picky and only like to grow on a particular type of rock, tree, or soil. This explains why certain kinds of rocks or trees can harbor a whole fairy-garden of lichens, while others nearby might have few lichens at all.

Lichens often look like an old splotch of paint on a rock or tree. But hiding within that crusty bit of color are two completely different life-forms.

Part Fungus, Part Plant

Fungi belong in a group of living things all by themselves. Plants belong in a completely different group. But when these two separate groups merge, they form a brand-new living thing: a lichen.

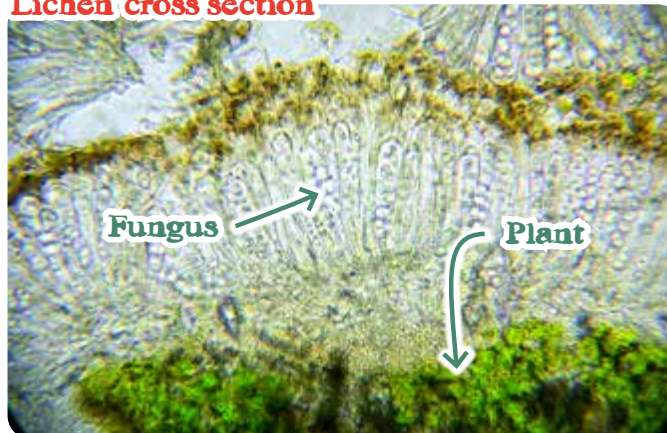
How does the fungus and the plant benefit from this tangled tango? The fungus provides a good place for the plant to live. For its part, the plant, which has chlorophyll, can make food using air, water, and energy from the sun, and it shares these with the fungus. A pretty good deal! Can any fungus merge with any plant to make a lichen? Nope, a lichen fungi must meet up with a plant partner in order to grow into the form that we call a lichen.

How Many Kinds of Lichens Does Missouri Have?

The Show-Me State has a little more than 500 species of lichens, and odds are good that some kinds are still waiting to be discovered (by you!). In fact, if you discover a new species, you get to name it. How cool is that?!

Variable bead

Lichen cross section



What do Lichens Look Like?

Scientists divide lichens into three basic growth forms. Crustose (*krust-ose*) lichens look like *crusty* stains or splotches of old paint. Foliose (*foe-lee-ose*) lichens are lobed, frilly, or leafy — like *foliage*. Careful, though. Lichens don't have true leaves. However, the lower surface of foliose lichens is a different color than their top surface, so that's a good clue for identification. Fruticose (*froot-ih-kose*) lichens are usually branchy or club-shaped, like *fruits*. Many lichens have button-shaped parts where the fungi spores form, so they can reproduce.

Crustose

Gold cobbles



Foliose

Star rosette

Bushy beard

Fruticose

British soldier

Mealy pixie-cup



Photos by David Bruns, with exception of bushy beard and mealy pixie-cup

JANUARY/FEBRUARY 2016 | 7

What Kinds of Lichens Am I Most Likely to See?

Speckled shield and greenshield lichens adorn the trunks of black and red oak trees. Candleflame lichen is common on trees and rocks in neighborhoods and parks. Stalkless cladonia and Dixie reindeer lichens grow on soil along trails in dry woods. Firedot lichen and stippleback leather lichen occur on limestone boulders and outcrops like those you find on glades, a kind of desertlike habitat.

When you go hunting for lichens, carry a magnifying glass, which will help you get a better look at their colors and textures. Also, many kinds of lichens look different when they're wet. That's because the fungus part of the lichen becomes transparent and allows the colors of the plant to show through. Try splashing a patch of dry lichens with your water bottle to see it change color and texture.

Speckled shield



Common greenshield



Where Are the Best Places to See Lichens?

You can find lichens growing pretty much everywhere in Missouri — your playground, local park, or nearest woody trail. But you'll find most of the state's lichen species growing in all their crusty, frilly, or fruity glory south of the Missouri River.

Winter is a great time to look for lichens because it's wet and cool enough for them to make food and grow. In the summer, when it's hot and dry, lichens often become dormant and less colorful. If you're up for a

winter hike, some great places to see lichens are Hughes Mountain Natural Area in Washington County south of Potosi, Lichen Glade Natural Area in St. Clair County, Wildcat Glade in Joplin, and Stegall Mountain Natural Area in Shannon County. Or just visit your nearest conservation nature center, where you're likely to see lichens on rocks, trees, and branches.

Can I Eat Lichens?

Better not. Many kinds of lichens are poisonous, so it's best to play it safe and leave lichens to the wildlife. Take all the photos you want, though!

Rock-shield lichen



Candleflame



Stalkless cladonia



Dixie reindeer



Fire dot



Stippleback leather



Can you find the lichen grasshopper?

Who Else Likes Lichens?

If you're a lichen moth caterpillar or a lichen grasshopper, you like lichens a lot! These critters depend on lichens for food and shelter. Many other animals like deer eat lichens, and some birds like ruby-throated hummingbirds harvest lichens to line their nests. Because lichens, with their soft, absorbent tissues, are extremely sensitive to air pollution, they are also good indicators of air quality. Some scientists even call them sentinels of forest health. To many people, lichens are important because they're amazing combo creatures, they look cool, and they make exploring nature more fun.



Ruby-throated hummingbird

THE FIERCE AND THE FURRIEST

by Matt Seek

With their beady eyes, lust for blood, and sneaky habits, weasels and their cousins earn a bad rap. But these animal assassins perform one of nature's most important jobs: They keep prey populations in check.

The weasel family is the world's largest group of meat-eating mammals. The clan includes weasels, minks, otters, badgers, martens, fishers, ferrets, and wolverines. Weasels and their kin are found on every continent except Australia and Antarctica. Five species live in Missouri. Although members of the family come in various shapes and sizes, they all have one thing in common: They make their living by hunting and killing other animals, and most prefer their prey to be alive and quivering until just before dinner.

LEAST WEASEL

TINY BUT BITEY

Barely bigger than a bratwurst, least weasels are the world's smallest meat-eating mammals. At birth, baby weasels weigh about as much as raisins. As adults, they're about as big as skinny hamsters and can squeeze through holes less than 1 inch wide. But don't let their small size fool you. Ounce for ounce, least weasels bite harder than any other North American mammal. They use their burly bite muscles — and sharp teeth — to pierce the skulls of the mice and voles that they eat.

HUNGER GAMES

What's that rumbling sound? It's probably a least weasel's stomach growling. To fuel their ferocity, weasels eat more than half their body weight each day. To keep up with a weasel's oversized appetite, an average 10-year-old human would have to eat nearly 150 quarter-pound hamburgers every 24 hours.



QUICK-CHANGE ARTISTS

Least weasels are found as far north as Alaska and as far south as Missouri. In northern parts of their range, these feisty mouse-munchers — and their close cousins, long-tailed weasels — trade their brown summer coats for white winter fur. This helps them sneak through the snow undetected to catch their prey. In Missouri, weasels usually grow just a pale brown coat in winter, but a few turn completely white.

LONG-TAILED WEASEL

THE HUNTER BECOMES THE HUNTED

Weasels are usually the ones doing the killing, but because of their small size, they sometimes end up as prey. Hawks, owls, foxes, coyotes, bobcats, house cats, snakes, and even mink will snack on a weasel if given the chance.



FAST AND FURIOUS

Long-tailed weasels are as nimble as ninjas and attack so swiftly that prey is usually caught off guard. Although mice and rats make up most of their diet, these slim, foot-long predators regularly bring down rabbits and other animals much larger than themselves. Once a weasel pounces on its prey, it wraps its body around the victim and bites so rapidly that it's hard to follow the action with the human eye. The weasel eventually works its way to the head where it delivers a knockout bite to the spine or neck.

AMERICAN MINK

STINKY MINKY

Like most members of the weasel family, mink are armed with a pair of musk glands on their furry backsides. The glands produce a stinky odor that some people think smells worse than a skunk's spray.

ALL-TERRAIN PREDATORS

Mink feel at home both on land and in water. Their skinny, tube-shaped bodies help them wiggle into narrow nooks and crannies to surprise rodents in their burrows. They can swim underwater for at least 50 feet and paddle fast enough to chase down fish. Mink are so at ease in the water, they've been known to float down streams curled up in balls, apparently sound asleep.



AMERICAN BADGER

BUILT LIKE A BULLDOZER

Badgers use their sharp, 1-inch-long claws and powerful muscles to dig up their dinner of voles, gophers, and ground squirrels. They loosen soil with their front paws, pass it under their bellies, and shovel it out of the hole with their back paws, often kicking debris nearly 5 feet into the air. At full speed, the furry dirt-drills can disappear underground in less than a minute and can even dig faster than a human with a shovel.



HUNTING BUDDIES

Badgers and coyotes sometimes hunt together. The toothy teammates spell double the trouble for ground squirrels and other tunnel dwellers. Why? If a squirrel scurries out of its burrow, the crafty coyote pounces on it. But if the squirrel stays put, the burly badger digs it up for dinner.



NORTH AMERICAN RIVER OTTER

ANGLING ADAPTATIONS

Have you ever tried to catch a fish — with your mouth? Luckily, river otters have a few tricks to give them the upper paw. Otters have webbed feet that act like paddles and thick tails that act like rudders. Their streamlined bodies can twist into turns so tight it would make a ballet dancer dizzy. Bushy whiskers help them feel food in murky water. And nose clips aren't needed — otters simply squeeze their snouts shut. To top it off, an otter can hold its breath for 4 minutes, which is plenty of time to nab some sushi for supper.



SWIMMING LESSONS

It's hard to believe, but baby river otters don't know how to swim. It's up to mom to teach them. Otter pups aren't enthusiastic students. In fact, they're often scared of water, so mom must sometimes drag them in. She patiently teaches each pup first to float, then to paddle at the surface, and finally to dive. When the lesson is over, the pups return to their den for milk and a well-deserved nap.



SNOW SLIDERS

Who needs a sled when you have a furry belly? To move through the snow, otters build up speed then tuck their legs to the side and *sliiiiide*. If a slope is really slick, otters slide down it over and over just for fun. In addition to the joy of sliding, the playful predators also amuse themselves with rocks and mussel shells in the water, tossing them up and then diving down to catch them.

THIS
ISSUE:

GRAY FOX VS FOX SQUIRREL

Illustrated by David Besenger

Lean, Strong, and Steady

Powerful legs help the slinky fox push and pull itself straight up a tree trunk.

Greater Grippers

Super-sharp claws on every digit help the squirrel stick to trees like a cocklebur on cotton socks.

Speedy Spacewalker

Squirrels can leap 10 feet across open space, traveling limb to limb at 20 mph.

Hooked on Climbing

The gray fox has strong, hooked claws that allow it to climb trees.

AND THE WINNER IS...

STRANGE but TRUE!

YOUR GUIDE TO ALL THE
UNUSUAL, UNIQUE,
AND **UNBELIEVABLE** STUFF
THAT GOES ON IN NATURE

RIVER OTTERS waste little time digesting their dinners. Once an otter munches and crunches a crayfish, it takes only an hour for the crayfish's skeleton to turn up in the otter's droppings.



Pass the bug spray! During mild winters, **TICKS** may become active in Missouri as early as mid-January. Frosty weather keeps the bloodsuckers at bay, which is one more reason to hope for some snow days.



On rainy nights, **GREBES** sometimes crash-land on department store parking lots. Biologists believe the mixed-up birds mistake the shiny, wet pavement for water and think they're plopping down in a marsh.



Each year, **BALD EAGLES** add new sticks to their old nests. After several years, a nest can become ginormous. One nest in Florida measured 10 feet across and 20 feet deep, and it weighed more than 4,000 pounds.



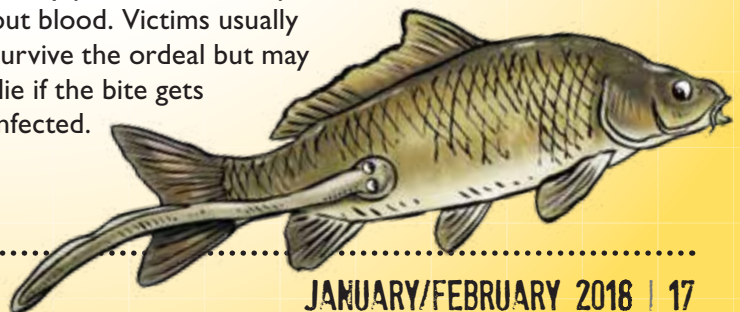
Huddle up! In fall and winter, **NORTHERN BOBWHITES** snuggle together in a circle with their tails touching and their beaks pointing out. This arrangement keeps them warm and helps them watch for predators.



The shovel-shaped front paws of an **EASTERN MOLE** are huge compared to the rest of its body. If you were built like one of these worm-slurping dirt-diggers, your hands would be as big as catcher's mitts.



A **CHESTNUT LAMPREY'S** mouth looks like a suction cup filled with fangs. The vampire fish use their pointy pie holes to clamp down on other fish and suck out blood. Victims usually survive the ordeal but may die if the bite gets infected.



HOW TO

Stay Warm in Winter



Wild mammals have a thick coat of fur to keep them cozy when weather turns wintry. We humans aren't so lucky. Here's how to clobber the cold.

There are two tricks to staying warm when you're playing outside in winter. The first trick is to keep your body fueled up so that it can generate plenty of heat. Before you go outside, eat a healthy meal. While you're out, snack on granola bars or a handful of nuts. And if you get chilly, try sipping some steamy cocoa.

The second trick is to dress in layers. Multiple layers trap heat and help you fine-tune your temperature. For example, if you're dragging a sled up a long, steep hill, you can take off a layer so you don't overheat. When you're ready to whoosh back down, you can put on a layer so you don't get cold.

Just don't overdo the layers. Don't wear so many that you waddle around like a penguin in a parka. If you pick the right clothes, three layers — base layer, insulation, and shell — are all you should need.

HERE'S
HOW YOU
DO IT

BASE LAYER



When you're outside playing, you sweat. If sweat stays against your skin, you'll soon be shivering. That's why the most important layer is the one you put on first. This layer needs to move, or wick, sweat away from your skin. Some fabrics are better at wicking than others. Look at the tag on your base layer. If the fabric is made of wool, polypropylene, or polyester you're good to go. If it's made of cotton, look for something else. Cotton holds sweat against your skin like a soggy sponge.

INSULATION



Your body is like a furnace. It makes heat to keep you warm, but if you aren't insulated, the heat disappears into the outside air. Like insulation in the walls of your house, a fluffy layer of clothing will trap the heat around your body. A shaggy fleece, wool sweater, or puffy jacket is a perfect insulation layer for your upper body. A stocking hat will trap heat around your head. Mittens or gloves will keep your hands warm. And wool socks will keep your toes toasty.

SHELLS



A nylon or polyester windbreaker and a pair of snow pants will block the wind during dry weather. If there's a chance of rain, sleet, or snow, wear a waterproof jacket and pants. Choose shells that are made of breathable fabrics that allow sweat to escape. Otherwise, you'll feel clammy. Wear boots that keep your feet dry. If the boots are big, wear two pairs of socks. But if the boots are snug, stick with a single pair. Blood doesn't flow well when your feet are cramped.

XPLOR MOR

Which Mammal are You?

Ever wonder which wild mammal you're most like?

Take our quiz to find out.

For each question, circle the letter next to the answer that sounds most like you.

1. What's your favorite restaurant?

- A. Any place with a salad bar suits me fine.
- B. A steakhouse. Give me meat, meat, and more meat.
- C. Seafood sounds swell — the fresher the better.
- D. Take me to a snack shack where I can nibble on nuts and chips.

2. Where would you build your dream house?

- E. Home is where you hang your hat. I'll live anywhere.
- F. Wide open spaces are what I like. Put me on the prairie.
- G. I want a house near the water.
- H. I'd build a treehouse high in the forest.

3. What's your favorite sport?

- I. Hide and seek.
- J. Cross country.
- K. Swimming.
- L. Skydiving.

4. You're a superhero. What's your super power?

- M. I can become invisible.
- N. Speed. I run faster than any critter around.
- O. I swim better than most fish.
- P. I soar through the sky like a paper airplane.

5. How would your friends describe you?

- Q. Shy.
- R. Clever.
- S. Playful.
- T. Busy.

WHAT IS IT?

— FROM PAGE 3 —

Brown trout are European fish that like to live in cold-water streams and lakes. They are also fun to catch. That's why they were brought to America in the 1800s. In Missouri, the Department of Conservation stocks them in cold streams like the Current River and in Lake Taneycomo. Adult brown trout feed mainly on small fish and crayfish. They live about four years and can grow 8 to 15 inches long. Learn more at mdc.mo.gov/field-guide.



E

Which letter did you circle most?



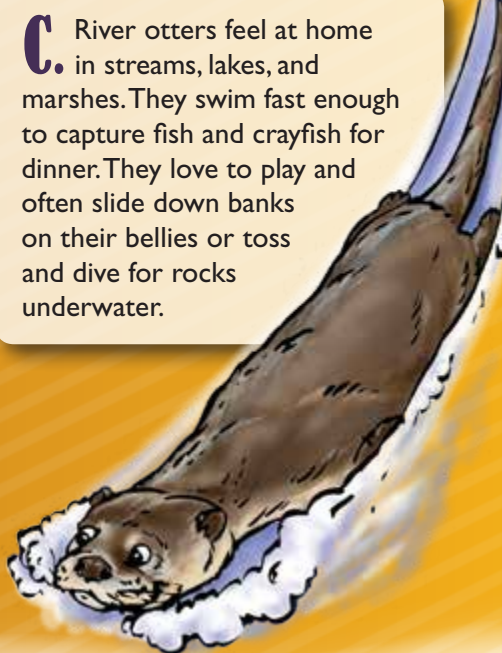
A. Cottontail rabbits are herbivores, which means they eat mostly plants. They live in many habitats, even backyards. Cottontails remain motionless to avoid being seen. If discovered, they hop away to hide in brushy cover.



B. Coyotes are carnivores, which means they eat mostly meat. They use smarts and speed — sprinting up to 45 mph — to capture prey. Coyotes prefer to live in grasslands, farmlands, and other open areas.



D. Flying squirrels live high up in trees in abandoned woodpecker holes. At night, they stay busy gathering acorns and nuts to eat. They glide from tree to tree on flaps of skin stretched between their front and back legs.



C. River otters feel at home in streams, lakes, and marshes. They swim fast enough to capture fish and crayfish for dinner. They love to play and often slide down banks on their bellies or toss and dive for rocks underwater.

To learn more about Missouri's wild mammals, scurry over to mdc.mo.gov/field-guide.

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FREE TO MISSOURI HOUSEHOLDS

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Mourning Cloak Butterfly



If you're out in the woods on a sunny day this winter, you may be surprised to see this lovely butterfly. Most butterflies bask in sunlight to raise their body temperature, but mourning cloaks can truly shiver, rapidly flexing their muscles with only minimal wing movement. This can raise their temperature 15 to 20 degrees in just a few minutes. Learn more about the mourning cloak and other Missouri butterflies and moths at mdc.mo.gov/field-guide.